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with the schemes of Dragendorff and others. I should suggest that analysis be made of each part of the plant, as of the root, stem, bark, wood, leaf, flower, and seeds; also of the separate organs of plants, *i. e.*, in the flower, of the stamens, pistils, petals, calyx, and of various plants under various conditions of age, climate, soil and seasons. Under these conditions a comparison of chemical constituents with plant structure would lead to a comprehension of the correlation between morphology and chemistry.

BRIEFER ARTICLES.

An interesting *Peronospora*.—The *Peronospora graminicola* Schr. is abundant here this season on *Setaria viridis*. Dr. Farlow gives a description of the species in the BOTANICAL GAZETTE, March, 1884, p. 39, after which he says: "This curious species, for which Schroeter has created the sub-genus *Sclerospora*, has been found in several European countries, but is at present only known at La Crosse (Minn.) in this country." The specimens gathered here are more vigorous, seemingly, than those from which the description of the species was made. For example, the conidiophores, instead of being solitary or sparingly branched, are clustered and much branched. But that which will most interest all lovers of the *Peronosporæ* is the fact that this mildew attacks the spikes of the *Setaria* and frequently distorts the floral parts beyond all recognition. Herewith is shown¹ a "head" of the foxtail flowers, drawn natural size. Instead of the apparently cylindrical spike, three or more inches long, with its many long bristles, there is a smooth head, or short spike of floral parts, as shown at *a* in the engraving. Rarely more than one head in the same plant is thus deformed. With few exceptions, the essential parts of the affected flowers are either abortive or wanting. At *b* is shown a spikelet double its natural size. The affected floral parts are usually of a purplish color, and abound in the oöspores of the *Peronospora*. In many of the palets and flowering glumes the thick-walled, dark brown or chestnut oöspores are so numerous as to occupy nearly all the space within the epidermis.

On other culms without flowers the upper leaves are frequently very stiff, upright and colored dark brown. In such the oöspores have formed in countless numbers.—BYRON D. HALSTED, *Agricultural College, Ames, Iowa.*

John Goldie, gardener and botanist.—John Goldie was born near Maybole, in the district of Carrick, Ayrshire, on the 21st March, 1793. Having selected gardening as an occupation, he was for a time under instructions in the art in the gardens of Kilkenam, a residence of the Fergusons, an Ayrshire county family, situated on the Girvan river in Carrick. At an early period of his career he became associated with Mr. James Smith, well known in his day

¹See plate VIII.